



Model CS640B91

Loop Powered, Current Output, Industrial Vibration Sensor

Installation and Operating Manual

**For assistance with the operation of this product,
contact PCB Piezotronics, Inc.**

**Toll-free: 800-959-4464
24-hour SensorLine: 716-684-0001
Fax: 716-684-3823
E-mail: imi@pcb.com
Web: www.imi-sensors.com**



Repair and Maintenance

PCB guarantees Total Customer Satisfaction through its “Lifetime Warranty Plus” on all Platinum Stock Products sold by PCB and through its limited warranties on all other PCB Stock, Standard and Special products. Due to the sophisticated nature of our sensors and associated instrumentation, **field servicing and repair is not recommended and, if attempted, will void the factory warranty.**

Beyond routine calibration and battery replacements where applicable, our products require no user maintenance. Clean electrical connectors, housings, and mounting surfaces with solutions and techniques that will not harm the material of construction. Observe caution when using liquids near devices that are not hermetically sealed. Such devices should only be wiped with a dampened cloth—never saturated or submerged.

In the event that equipment becomes damaged or ceases to operate, our Application Engineers are here to support your troubleshooting efforts 24 hours a day, 7 days a week. Call or email with model and serial number as well as a brief description of the problem.

Calibration

Routine calibration of sensors and associated instrumentation is necessary to maintain measurement accuracy. We recommend calibrating on an annual basis, after exposure to any extreme environmental influence, or prior to any critical test.

PCB Piezotronics is an ISO-9001 certified company whose calibration services are accredited by A2LA to ISO/IEC 17025, with full traceability to SI through N.I.S.T. In addition to our standard calibration services, we also offer specialized tests, including: sensitivity at elevated or cryogenic temperatures, phase response, extended high or low frequency response, extended range, leak testing, hydrostatic pressure testing, and others. For more information, contact your local PCB Piezotronics distributor, sales representative, or factory customer service representative.

Returning Equipment

If factory repair is required, our representatives will provide you with a Return Material Authorization (RMA) number, which we use to reference any information you have already provided and expedite the repair process. This number should be clearly marked on the outside of all returned package(s) and on any packing list(s) accompanying the shipment.

Contact Information

PCB Piezotronics, Inc.
3425 Walden Ave.
Depew, NY14043 USA
Toll-free: (800) 828-8840
24-hour SensorLine: (716) 684-0001
General inquiries: info@pcb.com
Repair inquiries: rma@pcb.com

For a complete list of distributors, global offices and sales representatives, visit our website, www.pcb.com.

Safety Considerations

This product is intended for use by qualified personnel who recognize shock hazards and are familiar with the precautions required to avoid injury. While our equipment is designed with user safety in mind, the protection provided by the equipment may be impaired if equipment is used in a manner not specified by this manual.

Discontinue use and contact our 24-Hour Sensorline if:

- Assistance is needed to safely operate equipment
- Damage is visible or suspected
- Equipment fails or malfunctions

For complete equipment ratings, refer to the enclosed specification sheet for your product.

Definition of Terms and Symbols

The following symbols may be used in this manual:



DANGER

Indicates an immediate hazardous situation, which, if not avoided, may result in death or serious injury.

**CAUTION**

Refers to hazards that could damage the instrument.

**NOTE**

Indicates tips, recommendations and important information. The notes simplify processes and contain additional information on particular operating steps.

The following symbols may be found on the equipment described in this manual:



This symbol on the unit indicates that high voltage may be present. Use standard safety precautions to avoid personal contact with this voltage.



This symbol on the unit indicates that the user should refer to the operating instructions located in the manual.



This symbol indicates safety, earth ground.



PCB工业监视和测量设备 - 中国RoHS2公布表

PCB Industrial Monitoring and Measuring Equipment - China RoHS 2 Disclosure Table

部件名称	有害物质					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
住房	O	O	O	O	O	O
PCB板	X	O	O	O	O	O
电气连接器	O	O	O	O	O	O
压电晶体	X	O	O	O	O	O
环氧	O	O	O	O	O	O
铁氟龙	O	O	O	O	O	O
电子	O	O	O	O	O	O
厚膜基板	O	O	X	O	O	O
电线	O	O	O	O	O	O
电缆	X	O	O	O	O	O
塑料	O	O	O	O	O	O
焊接	X	O	O	O	O	O
铜合金/黄铜	X	O	O	O	O	O
本表格依据 SJ/T 11364 的规定编制。						
O：表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。						
X：表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。						
铅是欧洲RoHS指令2011/65/ EU附件三和附件四目前由于允许的豁免。						

CHINA RoHS COMPLIANCE

Component Name	Hazardous Substances					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Chromium VI Compounds (Cr(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
Housing	O	O	O	O	O	O
PCB Board	X	O	O	O	O	O
Electrical Connectors	O	O	O	O	O	O
Piezoelectric Crystals	X	O	O	O	O	O
Epoxy	O	O	O	O	O	O
Teflon	O	O	O	O	O	O
Electronics	O	O	O	O	O	O
Thick Film Substrate	O	O	X	O	O	O
Wires	O	O	O	O	O	O
Cables	X	O	O	O	O	O
Plastic	O	O	O	O	O	O
Solder	X	O	O	O	O	O
Copper Alloy/Brass	X	O	O	O	O	O

This table is prepared in accordance with the provisions of SJ/T 11364.

O: Indicates that said hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.

X: Indicates that said hazardous substance contained in at least one of the homogeneous materials for this part is above the limit requirement of GB/T 26572.

Lead is present due to allowed exemption in Annex III or Annex IV of the European RoHS Directive 2011/65/EU.

Model CS64XB9Y Series Industrial 4-20mA Sensor



Operating Guide with Enclosed Warranty Information

3425 Walden Avenue, Depew, New York 14043-2495

Phone (716) 684-0003

Fax (716) 684-3823

Toll Free Line 1-800-959-4IMI

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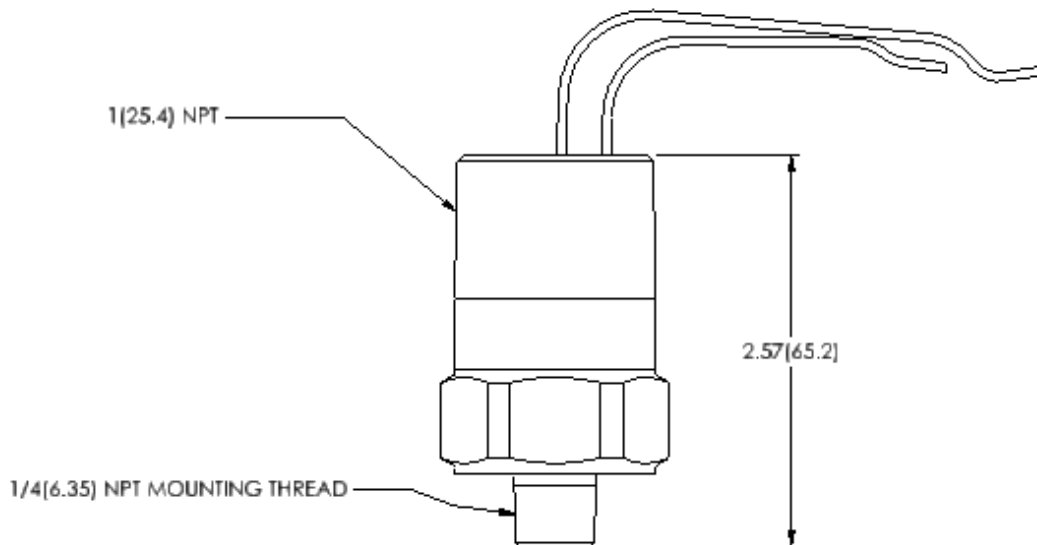
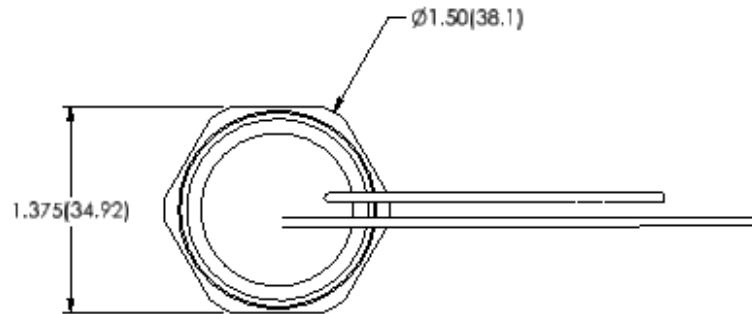
Introduction

The Model CS64XB9Y Series Industrial 4-20mA Sensors combine the capabilities of a piezoelectric vibration sensor and a 4-20mA vibration transmitter. The sensor outputs a 4-20mA signal that is proportional to the overall velocity or acceleration of the machinery. Ideal for monitoring the vibration of process equipment such as fans, motors and pumps, the output of the sensor is used for process control or predictive maintenance. There are many options in this series. Please refer to specific specification sheets for further details.

General Features

- Imbedded Piezoelectric Accelerometer for improved accuracy and frequency response.
- Vibration range can be in Acceleration or Velocity.
- Allows for continuous vibration monitoring of critical applications.
- Reduces sophisticated vibration analysis requirements.
- Readily interfaces to existing process control and predictive maintenance equipment.
- Rugged stainless steel construction for applications in harsh environments.
- Flexible design allows for various custom requirements.

Dimension Drawing



Inch (mm)

Operation and Wiring

Standard Wiring

The Model CS64XB9Y Series uses flying leads for all input and output connections and operate from a standard 2-wire, 4-20mA loop. Attach the positive (+) input from the power supply to the red wire and the negative (-) input from the power supply to the black wire.

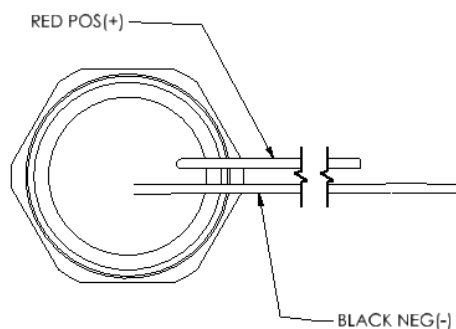


Figure 1 – wiring: standard connection

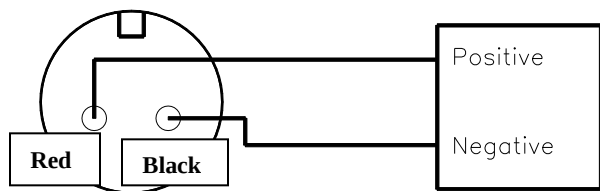


Figure 2 – wiring: loop powered

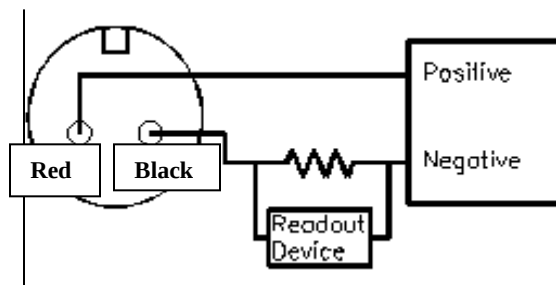


Figure 3 – wiring: loop powered/DC source

If using a standard DC power supply, install either an ammeter and/or load resistor in line with the return connection to the black wire.

The resistor will generate a DC voltage that is proportional to current by:

$$V = IR$$

If $R = 500\Omega$ and $I = 6mA$, then $V = 3Vdc$

Note:

- Resistor value must be less than: $(V_{supply} - 12) \times 50$.

Taking Measurements

When measuring the current output from the unit, use the following formula to calculate the vibration level:

Vibration Output = (Measured Output – 4mA) x (Full Scale Vibration Output /16mA)

<u>Measured mA</u>	<u>640B90</u>	<u>640B91/B93</u>	<u>640B92/B94</u>
4.00	0.0 ips, pk	0.0 ips, pk	0.0 ips, pk
8.00	0.125 ips, pk	0.25 ips, pk	0.5 ips, pk
12.0	0.25 ips, pk	0.5 ips, pk	1.0 ips, pk
15.75	0.37 ips, pk	0.73 ips, pk	1.47 ips, pk
20	0.5 ips, pk	1.0 ips, pk	2.0 ips, pk

<u>Measured mA</u>	<u>641B90</u>	<u>641B91/B93</u>	<u>641B92/B94</u>
4.00	0.0 ips, rms	0.0 ips, rms	0.0 ips, rms
8.00	0.125 ips, rms	0.25 ips, rms	0.5 ips, rms
12.0	0.25 ips, rms	0.5 ips, rms	1.0 ips, rms
15.75	0.37 ips, rms	0.73 ips, rms	1.47 ips, rms
20	0.5 ips, rms	1.0 ips, rms	2.0 ips, rms

Warning 1 – ESD sensitivity

The power supply/signal conditioner should not be opened by anyone other than qualified service personnel. This product is intended for use by qualified personnel who recognize shock hazards and are familiar with the safety precautions required to avoid injury.

Warning 2 – ESD sensitivity

This equipment is designed with user safety in mind; however, the protection provided by the equipment may be impaired if the equipment is used in a manner not specified by PCB Piezotronics, Inc.

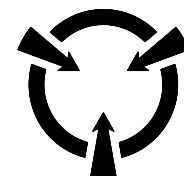
Caution 1 – ESD sensitivity

Cables can kill your equipment. High voltage electrostatic discharge (ESD) can damage electrical devices. Similar to a capacitor, a cable can hold a charge caused by triboelectric transfer, such as that which occurs in the following:

- Laying on and moving across a rug,
- Any movement through air,
- The action of rolling out a cable, and/or
- Contact with a non-grounded person.

The PCB solution for product safety:

- Connect the cables only with the AC power off.
- Temporarily “short” the end of the cable before attaching it to any signal input or output.



CAUTION
ELECTROSTATIC
DISCHARGE SENSITIVE

Caution 2 – ESD sensitivity

ESD considerations should be made prior to performing any internal adjustments on the equipment. Any piece of electronic equipment is vulnerable to ESD when opened for adjustments. Internal adjustments should

therefore be done ONLY at an ESD-safe work area. Many products have ESD protection, but the level of protection may be exceeded by extremely high voltage.

Warranty

IMI instrumentation is warranted against defective material and workmanship for 1 year unless otherwise expressly specified. Damage to instruments caused by incorrect power or misapplication, is not covered by warranty. *If there are any questions regarding power, intended application, or general usage, please consult with your local sales contact or distributor.* Batteries and other expendable hardware items are not covered by warranty.

Service

Because of the sophisticated nature of IMI instrumentation, field repair is typically **NOT** recommended and may void any warranty. If factory service is required, return the instrumentation according to the "Return Procedure" stated below. *A repair and/or replacement quotation will be provided prior to servicing at no charge.* Before returning the unit, please consult a factory IMI applications engineer concerning the situation as certain problems can often be corrected with simple on-site procedures.

Return procedure

To expedite returned instrumentation, contact a factory IMI applications engineer for a RETURN MATERIAL AUTHORIZATION (RMA) NUMBER. Please have information available such as model and serial number. Also, to insure efficient service, provide a written description of the symptoms and problems with the equipment to a local sales representative or distributor, or contact IMI if none are located in your area.

Customers outside the U.S. should consult their local IMI distributor for information on returning equipment. For exceptions, please contact the International Sales department at IMI to request shipping instructions and an RMA. For assistance, please call (716) 684-0003, or fax us at (716) 684-3823. You may also receive assistance via e-mail at imi@pcb.com or visit our web site at www.pcb.com.

Customer Service

IMI, a division of PCB Piezotronics, guarantees **Total Customer Satisfaction**. If, at any time, for any reason, you are not completely satisfied with any IMI product, IMI will repair, replace, or exchange it at no charge. You may also choose to have your purchase price refunded.

IMI offers to all customers, at no charge, 24-hour phone support. This service makes product or application support available to our customers, day or night, seven days a week. When unforeseen problems or emergency situations arise, call the **IMI Hot Line at (716) 684-0003**, and an application specialist will assist you.



3425 Walden Avenue, Depew, NY 14043-2495
Phone: (716) 684-0003 • USA Fax: (716) 684-3823 • INTL Fax: (716) 684-4703

*ICP® is a registered trademark of PCB Group, Incorporated,
which uniquely identifies PCB sensors that incorporate built-in microelectronics.*

Model Number CS640B91		LOOP POWERED, CURRENT OUTPUT, INDUSTRIAL VIBRATION SENSOR		Revision: A ECN #: 42133	
Performance		ENGLISH		SI	
Measurement Range	0.0 to 1 in/sec pk	0.0 to 25.4 mm/s pk		[1]	
Output	4-20 mA	4-20 mA			
Frequency Range(± 3 dB)	180 to 60,000 cpm	3 to 1000 Hz		[2][3]	
Broadband Resolution	0.005 in/sec pk	0.13 mm/s pk		[4]	
Non-Linearity	± 1 %	± 1 %			
Environmental					
Temperature Range	-40 to 176 °F	-40 to 80 °C			
Hazardous Area Approval	Ex ia, AExia IIC T4	Ex ia, AExia IIC T4			
Hazardous Area Approval	Ex na, AExnA IIC T4	Ex na, AExnA IIC T4			
Hazardous Area Approval	Class I Div 1 Groups A, B, C, D	Class I Div 1 Groups A, B, C, D			
Hazardous Area Approval	Class I Div 2 Groups A, B, C, D	Class I Div 2 Groups A, B, C, D			
Hazardous Area Approval	Class II Div 1 Groups E, F, G	Class II Div 1 Groups E, F, G			
Hazardous Area Approval	Class III	Class III			
Electrical					
Excitation Voltage	12 to 30 VDC	12 to 30 VDC			
Settling Time(within 2% of value)	<15 sec	<15 sec			
Electrical Isolation(Case)	>10 ⁸ Ohm	>10 ⁸ Ohm			
Physical					
Size (Hex x Height)	3.85 in x 5.52 in	98 mm x 140 mm			
Weight	1.2 lb	544 gm			
Mounting Thread	1/4 NPT	No Metric Equivalent			
Sensing Element	Ceramic	Ceramic			
Sensing Geometry	Shear	Shear			
Housing Material	Stainless Steel	Stainless Steel			
Electrical Connector	Integral Cable	Integral Cable			
Electrical Connection Position	Top	Top			
Electrical Connections(Positive (+))	18 AWG Red	18 AWG Red			
Electrical Connections(Negative (-))	18 AWG Black	18 AWG Black			
Wire Length	36 in	91.44 cm			
 [5]					
					
All specifications are at room temperature unless otherwise specified. In the interest of constant product improvement, we reserve the right to change specifications without notice. ICP® is a registered trademark of PCB Group, Inc.					
		 A PCB PIEZOTRONICS DIV. 3425 Walden Avenue, Depew, NY 14043		Phone: 800-959-4464 Fax: 716-684-3823 E-Mail: imi@pcb.com	
Entered: AP		Engineer: gs		Sales: BRS	
Date: 11/27/2013		Date: 11/27/2013		Date: 11/27/2013	
				Spec Number: 56155	

2

1

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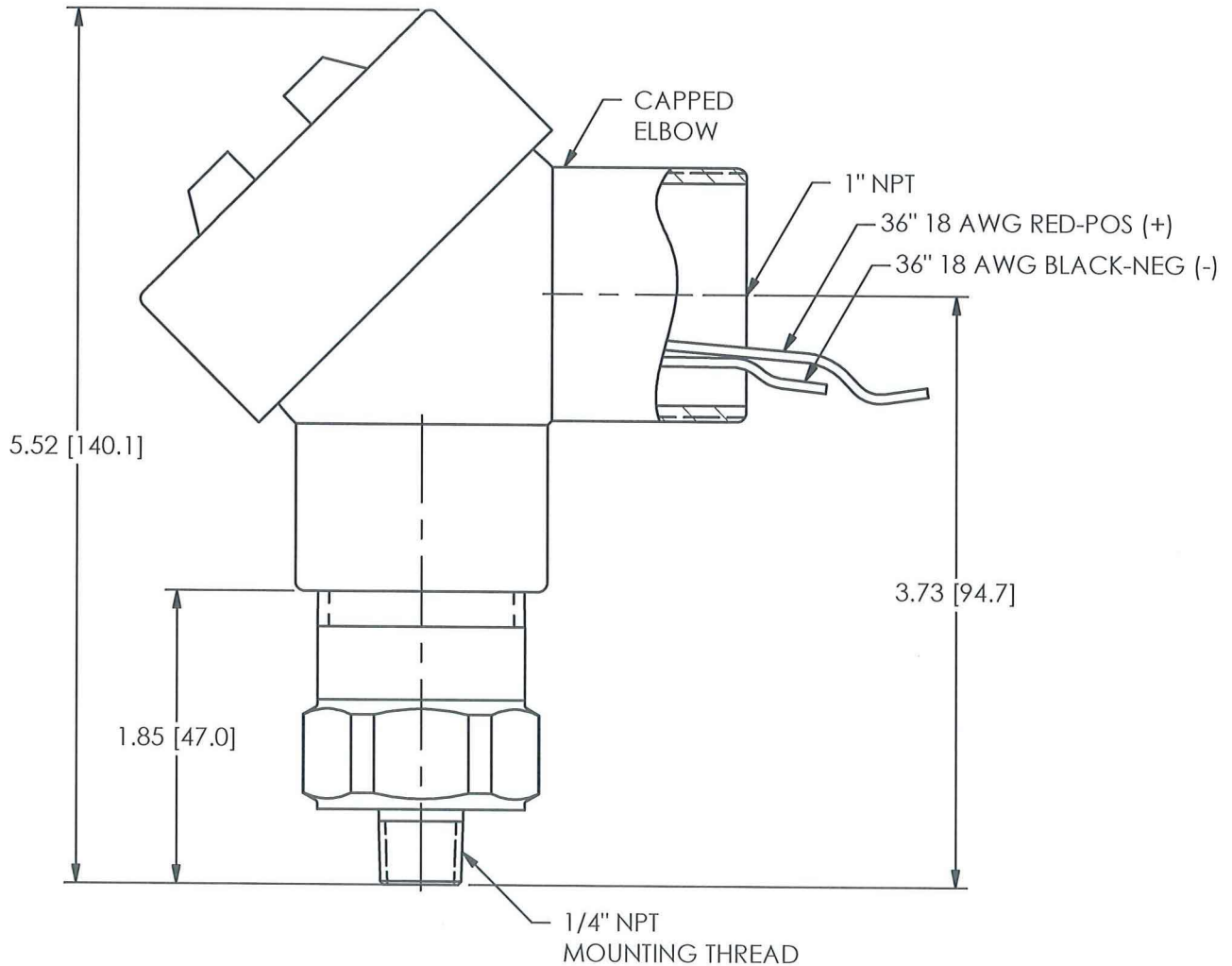
REVISIONS

REV	DESCRIPTION	DIN
A	UPDATED MODEL INFO	42133

56066

RELATED DRAWING

NO MODIFICATIONS PERMITTED
WITHOUT THE APPROVAL OF
THE AUTHORIZED PERSON



UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:

DIMENSIONS IN INCHES

DECIMALS XX ± 0.03
XXX ± 0.010

ANGLES ± 2 DEGREES

FILLETS AND RADII
.003 - .005

DIMENSIONS IN MILLIMETERS [IN BRACKETS]

DECIMALS X ± 0.8
XX ± 0.25

ANGLES ± 2 DEGREES

FILLETS AND RADII
0.07 - 0.13

DRAWN

JDM 6/13/13

CHECKED

ENGINEER

GS 6/13/13

TITLE

OUTLINE DRAWING
MODEL CS64XB9Y
4-20mA VELOCITY SENSOR

PCB PIEZOTRONICS™

3425 WALDEN AVE. DEPEW, NY 14043
(716) 684-0001 E-MAIL: sales@pcb.com

CODE
IDENT. NO.
52681

DWG. NO.

56066

SCALE: .875X

SHEET 1 OF 1

2

1

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Schedule Drawing

No modifications permitted
without reference to the
Notified Body

REVISIONS

REV	DESCRIPTION	ECO
A	UPDATED MODEL INFO	42133

NO CHANGES WITHOUT CSA APPROVAL

NON-HAZARDOUS / SAFE AREA

HAZARDOUS AREA
DIV 1
ZONE 0

SINGLE CHANNEL

CONDUIT/CABLE

TRANSDUCER
PN CS64XB9Y

5 PCB P/N 100-7094-90 OR EQUIVALENT. ALL CONDUIT AND JUNCTION BOXES MUST MEET THE CLASS, DIVISION, GROUP, AND INSTALLATION METHOD AS REQUIRED BY THE APPLICATION AND LOCAL GOVERNING AGENCY.

4 THE INSTALLER SHALL INSURE THAT THE TRANSDUCER MOUNTING STRUCTURE IS AT THE SAME GROUNDING POTENTIAL AS THE BARRIER GROUND. TOTAL EARTH LOOP IMPEDANCE SHALL BE LESS THAN ONE OHM.

3 BARRIER WILL BE MOUNTED IN AN ENCLOSURE THE SUITABILITY OF WHICH WILL BE DETERMINED BY LOCAL AUTHORITIES.

2 ENTITY APPLICATION:

Barrier	I.S. Apparatus
$V_{oc}/U_o \leq V_{MAX}/U_i$	
$I_{sc}/I_o \leq I_{MAX}/I_i$	
$C_a/C_o > C_i + C_{CABLE}$	
$L_a/L_o > L_i + L_{CABLE}$	
$P_o \leq P_i$ (CENELEC ONLY)	

BARRIERS WITHIN THE SPECIFIED LIMITATIONS ARE PERMITTED.

ENTITY PARAMETERS (CS64XB9Y):

$U_i = 30\text{ V}$
 $I_i = 100\text{ mA}$
 $P_i = 1\text{ W}$
 $C_i = 0$
 $L_i = 1.06\text{ }\mu\text{H}$

CERTIFIED BY THE APPROPRIATE APPROVAL
AUTHORITY FOR CONNECTION TO THE FOLLOWING AREAS:
ZONE 0

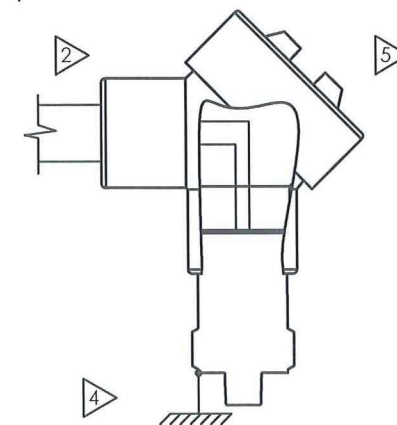
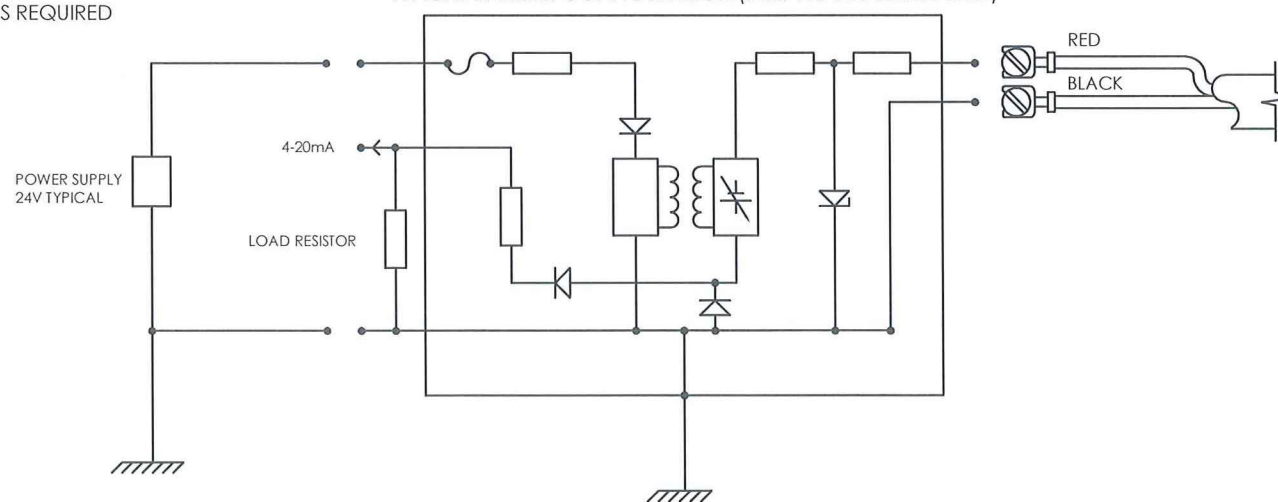
Exia IIC
AExia IIC

DIV 1
CLASS I, GROUPS A,B,C,D
CLASS II, GROUPS E,F,G
CLASS III

1. PART NO IS CS64XB9Y

NOTES: UNLESS OTHERWISE SPECIFIED.

TYPICAL BARRIER CONFIGURATION (MTL7106 RECOMMENDED)



UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
DECIMALS $X \pm .05$
 $XX \pm .01$
 $XXX \pm .005$
 $XXXX \pm .0005$
ANGLES ± 2 DEGREES
FILLETS AND RADII $.003 - .005$
HEX DIMENSIONS ARE:
 $< 0.5 +.000 / -.003$
 $> 0.5 +.000 / -.005$
INTERNAL THREAD DEPTH MIN
REMOVE ALL BURRS
SHARP = R.000 - R.003

CAUTION
ELECTROSTATIC
DISCHARGE SENSITIVE

DRAWN	CHECKED	ENGINEER
JDM	11/27/13	GGG
TITLE CSA APPROVAL CS64XB9Y INTERCONNECTION		

PCB PIEZOTRONICS 3425 WALDEN AVE. DEPEW, NY 14043 (716) 684-0001 EMAIL: SALES@PCB.COM	
CODE IDENT. NO. 52681	DWG. NO. 56140
SCALE: NONE	SHEET 1 OF 2

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Schedule Drawing

No modifications permitted
without reference to the
Notified Body

REVISIONS		
REV	DESCRIPTION	ECO
	-SEE SHEET ONE-	

POWER SUPPLY/
SIGNAL CONDITIONER

NON-HAZARDOUS / SAFE AREA
OR DIV 2 / ZONE 2

CONDUIT/CABLE

TRANSDUCER
PN CS64XB9Y

POWER SUPPLY
24V TYPICAL

RED
BLACK

NO CHANGES WITHOUT CSA APPROVAL

WARNING - EXPLOSION HAZARD
DO NOT DISCONNECT EQUIPMENT UNLESS
POWER HAS BEEN SWITCHED OFF OR THE AREA
IS KNOWN TO BE NON-HAZARDOUS

- 5 PCB P/N 100-7094-90 OR EQUIVALENT. SENSOR MUST BE INSTALLED IN A SUITABLE ENCLOSURE, ACCEPTABLE TO THE LOCAL INSPECTION AUTHORITY HAVING JURISDICTION. SENSOR CASE MUST BE BONDED TO GROUND ACCORDING TO SECTION 18-182 OF THE CEC, PART 1 AND ACCORDING TO ARTICLE 501.16 OF THE NEC AS APPLICABLE.
- 4 SENSOR MUST BE MOUNTED DIRECTLY ON A CONDUCTIVE STRUCTURE, WHICH IS VERIFIED TO BE CONNECTED TO SUPPLY SOURCE GROUND. OTHERWISE, USE CORTEM CONDUIT JUNCTION BOX PART NUMBER SB-36 OR EQUIVALENT CONTAINING INTEGRAL GROUND SCREW CONNECTED TO SUPPLY SOURCE GROUND.
3. FOR GUIDANCE ON CANADIAN INSTALLATION, REFER TO CEC PART I.
FOR GUIDANCE ON U.S. INSTALLATION, INSTALL IN ACCORDANCE WITH NEC [ANSI/NFPA70] AND [ANSI/ISA RP12.6].
2. CERTIFIED BY THE APPROPRIATE APPROVAL AUTHORITY FOR CONNECTION TO THE FOLLOWING AREAS:
ZONE 2
ExnA IIC
AExnA IIC
DIV 2
CLASS I, GROUPS A,B,C,D
1. PART NO. IS CS64XB9Y

NOTES: UNLESS OTHERWISE SPECIFIED.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
DECIMALS X ± .05
XX ± .01
XXX ± .005
XXXX ± .0005
ANGLES ±2 DEGREES
FILLET AND RADII .003 - .005
HEX DIMENSIONS ARE:
< 0.5 +.000 / -.003
> 0.5 +.000 / -.005
INTERNAL THREAD DEPTH MIN
REMOVE ALL BURRS
SHARP = R.000 - R.003



DRAWN		CHECKED		ENGINEER	
JDM	11/27/13	<i>gn</i>	11/27/13	GGG	11/27/13
TITLE					
CSA APPROVAL CS64XB9Y INTERCONNECTION					

PCB PIEZOTRONICS TM	
3425 WALDEN AVE. DEPEW, NY 14043 (716) 684-0001 EMAIL: SALES@PCB.COM	
CODE IDENT. NO. 52681	DWG. NO. 56140
SCALE: NONE	
SHEET 2 OF 2	



Certificate of Compliance

Certificate: 1632187

Master Contract: 184981

Project: 80014642

Date Issued: 2019-11-26

Issued To: PCB Piezotronics
3425 Walden Ave
Depew, New York, 14043
United States

Attention: Carrie Termin



Issued by: *Jignesh Dabhi*
Jignesh Dabhi

PRODUCTS

CLASS 2258 04 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations
CLASS 2258 84 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations -
CERTIFIED TO U.S. STANDARDS

Class I, Div. 1, Groups A, B, C and D; Class II, Div. 1, Groups E, F and G; Class III, Div 1:

Exia IIC T4:

AEx ia IIC T4:

Models EX64xB0y Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe with entity parameters of: U_i (V max) = 30V, I_i (I max) = 100mA, P_i = 1W, C_i = 0, L_i = 1.06 uH; when installed per installation Dwg 27534; Temp Code T4 @ Max Ambient 80 Deg C.

Models 9842VCRT Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe with entity parameters of: U_i (V max) = 30V, I_i (I max) = 100mA, P_i = 1W, C_i = 0, L_i = 1.06 uH; when installed per installation Dwg 36576; Temp Code T4 @ Max Ambient 80 Deg C.

Models EX64xB1y and EX64xB6y Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe with entity parameters of: U_i (V max) = 30V, I_i (I max) = 100mA, P_i = 1W, C_i = 61 nF, L_i = 306 uH; when installed per installation Dwg 27534; Temp Code T4 @ Max Ambient 80 Deg C.

Models EXTO64xB3y Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe with entity parameters of: U_i (V max) = 28V, I_i (I max) = 120mA, P_i = 1W, C_i = 0, L_i = 1.06 uH; when installed per installation Dwg 27536; Temp Code T4 @ Max Ambient 80 Deg C.



Models EXTO64xB1y and EXTO64xB6y Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe with entity parameters of: U_i (V max) = 28V, I_i (I max) = 120mA, P_i = 1W, C_i = 61 nF, L_i = 306 μ H; when installed per installation Dwg 27536; Temp Code T4 @ Max Ambient 80 Deg C.

Models EXRV64xB0y Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe with entity parameters of: U_i (V max) = 28V, I_i (I max) = 120mA, P_i = 1W, C_i = 0, L_i = 121.06 μ H; when installed per installation Dwg 30538; Temp Code T4 @ Max Ambient 80 Deg C.

Models EXRV64xB1y and EXRV64xB6y Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe with entity parameters of: U_i (V max) = 28V, I_i (I max) = 120mA, P_i = 1W, C_i = 61 nF, L_i = 426 μ H; when installed per installation Dwg 30538; Temp Code T4 @ Max Ambient 80 Deg C.

Models EX64xB7y Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe with entity parameters of: U_i (V max) = 30V, I_i (I max) = 100mA, P_i = 1W, C_i = 0, L_i = 1.06 μ H; when installed per installation Dwg 28766; Temp Code T4 @ Max Ambient 80 Deg C.

Models EXTO64xB7y Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe with entity parameters of: U_i (V max) = 28V, I_i (I max) = 120mA, P_i = 1W, C_i = 0, L_i = 1.06 μ H; when installed per installation Dwg 28767; Temp Code T4 @ Max Ambient 80 Deg C.

Models EXRV64xB7y Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe with entity parameters of: U_i (V max) = 28V, I_i (I max) = 120mA, P_i = 1W, C_i = 0, L_i = 1.06 μ H; when installed per installation Dwg 29987; Temp Code T4 @ Max Ambient 80 Deg C.

Note: The "x" in the model code may be a 0 to 9, which denotes variations in frequency response range of the sensors. The "y" in the model code may be a 0 to 9, which denotes variations in sensor sensitivity.

Models EX64xA0y Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe with entity parameters of: U_i (V max) = 30V, I_i (I max) = 100mA, P_i = 1W, C_i = 0, L_i = 1.06 μ H; when installed per installation Dwg 27535; Temp Code T4 @ Max Ambient 80 Deg C.

Models 9942VCRT Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe with entity parameters of: U_i (V max) = 30V, I_i (I max) = 100mA, P_i = 1W, C_i = 0, L_i = 1.06 μ H; when installed per installation Dwg 36578; Temp Code T4 @ Max Ambient 80 Deg C.

Models EX64xA1y and EX64xA6y Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe with entity parameters of: U_i (V max) = 30V, I_i (I max) = 100mA, P_i = 1W, C_i = 61 nF, L_i = 306 μ H; when installed per installation Dwg 27535; Temp Code T4 @ Max Ambient 80 Deg C.

Models EXTO64xA3y Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe with entity parameters of: U_i (V max) = 28V, I_i (I max) = 120mA, P_i = 1W, C_i = 0, L_i = 1.06 μ H; when installed per installation Dwg 27537; Temp Code T4 @ Max Ambient 80 Deg C.

Models EXTO64xA1y and EXTO64xA6y Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe with entity parameters of: U_i (V max) = 28V, I_i (I max) = 120mA, P_i = 1W, C_i = 61 nF, L_i = 306 μ H; when installed per installation Dwg 27537; Temp Code T4 @ Max Ambient 80 Deg C.



Models EXRV64xA0y Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe with entity parameters of: U_i (V max) = 28V, I_i (I max) = 120mA, P_i = 1W, C_i = 0, L_i = 121.06 μ H; when installed per installation Dwg 30540; Temp Code T4 @ Max Ambient 80 Deg C.

Models EXRV64xA1y and EXRV64xA6y Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe with entity parameters of: U_i (V max) = 28V, I_i (I max) = 120mA, P_i = 1W, C_i = 61 nF, L_i = 426 μ H; when installed per installation Dwg 30540; Temp Code T4 @ Max Ambient 80 Deg C.

Models CS64xB9y Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe with entity parameters of: U_i (V max) = 30V, I_i (I max) = 100mA, P_i = 1W, C_i = 0, L_i = 1.06 μ H; when installed per Dwg 56140; Temp Code T4 @ Max Ambient 80 Deg C.

Note: The "x" in the model code may be a 0 to 9, which denotes variations in frequency response range of the sensors. The "y" in the model code may be a 0 to 9, which denotes variations in sensor sensitivity.

APPLICABLE REQUIREMENTS

CAN/CSA-C22.2 No. 0-M91	- General Requirements – Canadian Electrical Code, Part II
C22.2 No. 142-M1987 (R2009)	- Process Control Equipment
CAN/CSA-C22.2 No. 157-92 (R2012)	- Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations
UL 913 (7 th Ed.)	- Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II and III, Division 1, Hazardous Locations
UL 916 (4 th Ed.)	- Energy Management Equipment
CAN/CSA-E60079-0:07	- Electrical apparatus for explosive gas atmospheres - Part 0: General Requirements
CAN/CSA-E60079-11:02	- Electrical apparatus for explosive gas atmospheres - Part 11: Intrinsic Safety "i"
ANSI/UL 60079-0:05	- Electrical Apparatus for Explosive Gas Atmospheres - Part 0: General Requirements
ANSI/UL 60079-11:07	- Electrical apparatus for Explosive Gas Atmospheres - Part 11: Intrinsic Safety "i"

CLASS 2258 03 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non-Incendive Systems - For Hazardous Locations

CLASS 2258 83 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non-Incendive Systems - For Hazardous Locations - CERTIFIED TO U.S. STANDARDS

Ex nL IICT4:

AEx nA IICT4:

Class I, Div. 2, Groups A, B, C, D:

Models EX64xB0y Vibration Sensors, input rated 28V dc max, 20mA; non-incendive with entity parameters of: U_i (V max) = 30V, I_i (I max) = 100mA, P_i = 1W, C_i = 0, L_i = 1.06 μ H; when installed per installation Dwg 27534; Temp Code T4 @ Max Ambient 80 Deg C.



Models 9842VCRT Vibration Sensors, input rated 28V dc max, 20mA; non-incendive with entity parameters of: U_i (V max) = 30V, I_i (I max) = 100mA, P_i = 1W, C_i = 0, L_i = 1.06 μ H; when installed per installation Dwg 36576; Temp Code T4 @ Max Ambient 80 Deg C.

Models EX64xB1y and EX64xB6y Vibration Sensors, input rated 28V dc max, 20mA; non-incendive with entity parameters of: U_i (V max) = 30V, I_i (I max) = 100mA, P_i = 1W, C_i = 61 nF, L_i = 306 μ H; when installed per installation Dwg 27534; Temp Code T4 @ Max Ambient 80 Deg C.

Models EXTO64xB3y Vibration Sensors, input rated 28V dc max, 20mA; non-incendive with entity parameters of: U_i (V max) = 28V, I_i (I max) = 120mA, P_i = 1W, C_i = 0, L_i = 1.06 μ H; when installed per installation Dwg 27536; Temp Code T4 @ Max Ambient 80 Deg C.

Models EXTO64xB1y and EXTO64xB6y Vibration Sensors, input rated 28V dc max, 20mA; non-incendive with entity parameters of: U_i (V max) = 28V, I_i (I max) = 120mA, P_i = 1W, C_i = 61 nF, L_i = 306 μ H; when installed per installation Dwg 27536; Temp Code T4 @ Max Ambient 80 Deg C.

Models EXRV64xB0y Vibration Sensors, input rated 28V dc max, 20mA; non-incendive with entity parameters of: U_i (V max) = 28V, I_i (I max) = 120mA, P_i = 1W, C_i = 0, L_i = 121.06 μ H; when installed per installation Dwg 30538; Temp Code T4 @ Max Ambient 80 Deg C.

Models EXRV64xB1y and EXRV64xB6y Vibration Sensors, input rated 28V dc max, 20mA; non-incendive with entity parameters of: U_i (V max) = 28V, I_i (I max) = 120mA, P_i = 1W, C_i = 61 nF, L_i = 426 μ H; when installed per installation Dwg 30538; Temp Code T4 @ Max Ambient 80 Deg C.

Notes:

1. Sensor case must be bonded to ground according to Section 18-182 of the CEC, Part 1.
2. The "x" in the model code may be a 0 to 9, which denotes variations in frequency response range of the sensors. The "y" in the model code may be a 0 to 9, which denotes variations in sensor sensitivity.

Models EX64xA0y Vibration Sensors, input rated 28V dc max, 20mA; non-incendive with entity parameters of: U_i (V max) = 30V, I_i (I max) = 100mA, P_i = 1W, C_i = 0, L_i = 1.06 μ H; when installed per installation Dwg 27535; Temp Code T4 @ Max Ambient 80 Deg C.

Models 9942VCRT Vibration Sensors, input rated 28V dc max, 20mA; non-incendive with entity parameters of: U_i (V max) = 30V, I_i (I max) = 100mA, P_i = 1W, C_i = 0, L_i = 1.06 μ H; when installed per installation Dwg 36578; Temp Code T4 @ Max Ambient 80 Deg C.

Models EX64xA1y and EX64xA6y Vibration Sensors, input rated 28V dc max, 20mA; non-incendive with entity parameters of: U_i (V max) = 30V, I_i (I max) = 100mA, P_i = 1W, C_i = 61 nF, L_i = 306 μ H; when installed per installation Dwg 27535; Temp Code T4 @ Max Ambient 80 Deg C.

Models EXTO64xA3y Vibration Sensors, input rated 28V dc max, 20mA; non-incendive with entity parameters of: U_i (V max) = 28V, I_i (I max) = 120mA, P_i = 1W, C_i = 0, L_i = 1.06 μ H; when installed per installation Dwg 27537; Temp Code T4 @ Max Ambient 80 Deg C.

Models EXTO64xA1y and EXTO64xA6y Vibration Sensors, input rated 28V dc max, 20mA; non-incendive with entity parameters of: U_i (V max) = 28V, I_i (I max) = 120mA, P_i = 1W, C_i = 61 nF, L_i = 306 μ H; when installed per installation Dwg 27537; Temp Code T4 @ Max Ambient 80 Deg C.



Models EXRV64xA0y Vibration Sensors, input rated 28V dc max, 20mA; non-incendive with entity parameters of: U_i (V max) = 28V, I_i (I max) = 120mA, P_i = 1W, C_i = 0, L_i = 121.06 μ H; when installed per installation Dwg 30540; Temp Code T4 @ Max Ambient 80 Deg C.

Models EXRV64xA1y and EXRV64xA6y Vibration Sensors, input rated 28V dc max, 20mA; non-incendive with entity parameters of: U_i (V max) = 28V, I_i (I max) = 120mA, P_i = 1W, C_i = 61 nF, L_i = 426 μ H; when installed per installation Dwg 30540; Temp Code T4 @ Max Ambient 80 Deg C.

Models CS64xB9y Vibration Sensors, input rated 28V dc max, 20mA; non-incendive with entity parameters of: U_i (V max) = 30V, I_i (I max) = 100mA, P_i = 1W, C_i = 0, L_i = 1.06 μ H; when installed per Dwg 56140; Temp Code T4 @ Max Ambient 80 Deg C.

Notes:

1. For Canadian Installations, sensor case must be bonded to ground according to Section 18-182 of the CEC, Part 1.
2. For US Installations, sensor case must be bonded to ground according to Article 501.16 of the NEC.
3. The "x" in the model code may be a 0 to 9, which denotes variations in frequency response range of the sensors. The "y" in the model code may be a 0 to 9, which denotes variations in sensor sensitivity.

APPLICABLE REQUIREMENTS

CAN/CSA-C22.2 No. 0-M91	- General Requirements – Canadian Electrical Code, Part II
C22.2 No. 142-M1987 (R2009)	- Process Control Equipment
C22.2 No. 213-M1987 (R2008)	- Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations
UL 916 (4 th Ed.)	- Energy Management Equipment
UL 1604 (3 rd Ed.)	- Electrical Equipment for Use in Class I and II, Division 2; Class III Hazardous (Classified) Locations
ANSI/ISA 12.12.01-2000	- Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations
CAN/CSA-E60079-15:02	- Electrical apparatus for explosive gas atmospheres - Part 15: Type of Protection "n"
ANSI/UL 60079-15:02	- Electrical apparatus for Explosive Gas Atmospheres - Part 15: Type of Protection "n"

CLASS 2258 02 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations

CLASS 2258 82 - PROCESS CONTROL EQUIPMENT – For Hazardous Locations - CERTIFIED TO U.S. STANDARDS

Ex nA IICT4:

AEx nA IIC T4:

Class I, Div. 2, Groups A, B, C, D:

Models EX64xB7y Vibration Sensors, input rated 28V dc max, 20mA; suitable for use in Class I, Div. 2 or Class I, Zone 2 locations, when installed per installation Dwg 28766; Temp Code T4 @ Max Ambient 80 Deg C.



Models EXTO64xB7y Vibration Sensors, input rated 28V dc max, 20mA; suitable for use in Class I, Div. 2 or Class I, Zone 2 locations, when installed per installation Dwg 28766; Temp Code T4 @ Max Ambient 80 Deg C.

Models EXRV64xB7y Vibration Sensors, input rated 28V dc max, 20mA; suitable for use in Class I, Div. 2 or Class I, Zone 2 locations, when installed per installation Dwg 28766; Temp Code T4 @ Max Ambient 80 Deg C.

Models CS64xB9y Vibration Sensors, input rated 28V dc max, 20mA; suitable for use in Class I, Div. 2 or Class I, Zone 2 locations, when installed per installation Dwg 56140; Temp Code T4 @ Max Ambient 80 Deg C.

Notes:

1. Sensor must be installed in a suitable enclosure, acceptable to the local inspection authority having jurisdiction.
2. The "x" in the model code may be a 0 to 9, which denotes variations in frequency response range of the sensors. The "y" in the model code may be a 0 to 9, which denotes variations in sensor sensitivity.

APPLICABLE REQUIREMENTS

CAN/CSA-C22.2 No. 0-M91	- General Requirements – Canadian Electrical Code, Part II
C22.2 No. 142-M1987(R2009)	- Process Control Equipment
C22.2 No. 213-M1987(R2008)	- Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations
UL 916 (4 th Ed.)	- Energy Management Equipment
UL 1604 (3 rd Ed.)	- Electrical Equipment for Use in Class I and II, Division 2; Class III Hazardous (Classified) Locations
ANSI/ISA 12.12.01-2000	- Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations
CAN/CSA-E60079-15:02	- Electrical apparatus for explosive gas atmospheres - Part 15: Type of Protection "n"
ANSI/UL 60079-15:02	- Electrical apparatus for Explosive Gas Atmospheres - Part 15: Type of Protection "n"

CLASS 2258 04 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations

CLASS 2258 84 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations - CERTIFIED TO U.S. STANDARDS

Ex ia IIC; AEx ia IIC; Class I, Div. 1, Groups A, B, C and D; Class II, Div. 1, Groups E, F and G; Class III; T_{amb}: -40C to 121C; Tcode: T3C

Models EXHT(M)64x (with connector or integral cable), Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe when installed per installation drawing 71991 (sheet 1);



Models EXHTTO(M)64x (with connector or integral cable), Vibration and Temperature Sensors, input rated 28V dc max, 20mA; intrinsically safe when installed per installation drawing 72010 (sheet 1);

Models EXHT(M)64x (with conduit connection), Vibration Sensors, input rated 28V dc max, 20mA; intrinsically safe when installed per installation drawing 71993 (sheet 1);

Models EXHTTO(M)64x (with conduit connection), Vibration and Temperature Sensors, input rated 28V dc max, 20mA; intrinsically safe when installed per installation drawing 72068 (sheet 1);

Ex ic IIC; AEx ic IIC; Class I Division 2 Groups A, B, C and D; T_{amb}: -40C to 121C; Tcode: T3C

Models EXHT(M)64x (with connector or integral cable), Vibration Sensors, input rated 28V dc max, 20mA; suitable for use in Class I, Div. 2/ Zone 2 (Ex ic) locations when per installation drawing 71991 (sheet 2);

Models EXHTTO(M)64x (with connector or integral cable), Vibration and Temperature Sensors, input rated 28V dc max, 20mA; suitable for use in Class I, Div. 2/ Zone 2 (Ex ic) locations when per installation drawing 72010 (sheet 2);

Notes:

1. Sensor must be installed in a suitable enclosure, acceptable to the local inspection authority having jurisdiction.
2. The "x" is a series of letters and numbers in the model for different variations including variation in frequency response, top cable entry, side cable entry and other differences not critical to certification.
3. M in the model number is optional and to include Metric threading adapters instead of English threading adapters

CLASS 2258 02 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations

CLASS 2258 82 - PROCESS CONTROL EQUIPMENT – For Hazardous Locations - CERTIFIED TO U.S. STANDARDS

Class I Division 2 Groups A, B, C and D; T_{amb}: -40C to 121C; Tcode: T3C

Models EXHT(M)64x (with conduit connection), Vibration Sensors, input rated 28V dc max, 20mA; Suitable for Class I Division 2 when installed per installation drawing 71993 (sheet 2).

Models EXHTTO(M)64x (with conduit connection), Vibration and Temperature Sensors, input rated 28V dc max, 20mA; Suitable for Class I Division 2 when installed per installation drawing 72068 (sheet 2).

1. Sensor must be installed in a suitable enclosure, acceptable to the local inspection authority having jurisdiction.
2. The "x" is a series of letters and numbers in the model for different variations including variation in frequency response, top cable entry, side cable entry and other differences not critical to certification.
3. M in the model number is optional and to include Metric threading adapters instead of English threading adapters



APPLICABLE REQUIREMENTS

CSA C22.2 No. 61010-1-12/ ANSI/ISA 61010-1 3rd Ed. (R2017)	- Safety requirements for electrical equipment for measurement, control, and laboratory use — Part 1: General requirements
CSA C22.2 No. 213 2017/ UL 121201 9th Ed.	- Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations
CSA C22.2 No 60079-0:2019	- Explosive Atmospheres-Part 0: Equipment-General requirements
CSA C22.2 No 60079-11:2014	- Explosive atmospheres — Part 11: Equipment protection by intrinsic safety “i”
UL 60079-0: 2019	Standard for Safety – Explosive Atmospheres – Part 0: Equipment – General Requirements, Ed. 6
UL 60079-11:2014	Standard for Safety – Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety “I”, Ed. 6

MARKINGS

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Markings are etched directly into the Sensor enclosure body. The following marking details appear:

I.S. models

- CSA Monogram with C US Indicator
- Submittor Identification
- Model Number
- Serial Number, Date Code or Month and Year of Manufacture
- Electrical Rating
- Hazardous Location Designation- As per Product Section
- Applicable Temperature Code
- Applicable Ambient temperature range
- For EXHT and EXHTTO series: DC symbol: ===
- Certificate # reference (ie. 2005 1632187 X)
- Reference to Installation Drawing



Div. 2 Non-Incendive models

- CSA Monogram with C US indicator.
- Submittor Identification
- Model Number
- Serial Number, Date Code or Month and Year of Manufacture
- Electrical Rating
- Hazardous Location Designation: As per Product Section
- Applicable Temperature Code
- Applicable Ambient temperature range
- For EXHT and EXHTTO series: DC symbol “---” and Reference to Installation Drawing
- Certificate # reference (ie. 2005 1632187 X)

Div. 2 Non-arcing models (.....B7x, EXHT and EXHTTO series)

- CSA Monogram with C US indicator.
- Submittor Identification
- Model Number
- Serial Number, Date Code or Month and Year of Manufacture
- Electrical Rating
- Hazardous Location Designation: As per Product Section
- Applicable Temperature Code
- Applicable Ambient temperature range
- For EXHT and EXHTTO series: DC symbol “---”
- Certificate # reference (ie. 2005 1632187 X)
- Caution: re. Disconnection of circuits (appears on referenced Installation Drawing).

EXHT and EXHTTO series models must be accompanied by documentation containing the following information.

General:

Technical specifications, product operation, service and instructions for use.

Equipment Ratings:

This includes equipment supply, description of I/O connections, duty cycle and operating environmental conditions.

1. Pollution degree 4;
2. Electrical Ratings: 24VDC, 20mA
3. Temperature (ambient): -40°C to 121°C
4. Hazardous location ratings



Supplement to Certificate of Compliance

Certificate: 1632187

Master Contract: 184981

*The products listed, including the latest revision described below,
are eligible to be marked in accordance with the referenced Certificate.*

Product Certification History

Project	Date	Description
80014642	2019-11-26	Evaluation for update of report 1632187 (last update 70051763) to include High Temperature option. Quote assumes that maximum two versions of similar schematics are needed to be assessed. Quote includes one temperature test. Only the new model will be assessed with the latest applicable standards. Any other testing that may be required to accomplish the reassessment will be quoted separately if necessary.
000070051763	2016-03-22	Update to Existing Report Certificate 1632187; Report 2655913. Expansion of the "x" and "y" variable digits.
0002655913	2013-09-26	Update to include new Model CS64xB9y Vibration Sensors.
0002108819	2008-11-26	Update to cover revisions to numerous drawings.
0001920106	2007-06-06	Update to cover minor revisions to circuitry and to related drawings.
0001878614	2007-01-31	Update to cover addition of models 9842VCRT and 9942VCRT.
0001632187	2005-11-03	640 Series Vibration Sensors for Hazardous Locations